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Coast Guard

Safety Rules for Self-propelled Vessels Carrying Hazardous Liquids

DEPARTMENT OF TRANSPORTATION

Coast Guard

46 CFR Parts 30, 91 and 153

[CGD 78-128]

Safety Rules for Self-propelled Vessels Carrying Hazardous Liquids

AGENCY: Coast Guard, DOT.

ACTION: Proposed rule.

SUMMARY: The Coast Guard is proposing to revise the rules for self-propelled vessels carrying hazardous liquids. The proposed rule adds to the list of cargoes regulated under Part 153 and includes carriage requirements for these new cargoes. The proposed rule would correct editorial errors, clarify provisions that are confusing, delete provisions that are impractical, and add a number of new provisions. Finally the proposed rule would update the addresses of the Coast Guard district merchant marine technical offices found in Part 91.

DATES: Comments must be received on or before September 2, 1980.

ADDRESS: Comments should be submitted to: Commandant (G-CMC/24) (CGD 78-128), U.S. Coast Guard, Washington, D.C. 20593.

Between the hours of 7:00 a.m. and 5:00 p.m., Monday through Thursday, comments may be delivered to and will be available for inspection or copying at the Marine Safety Council (G-CMC/24), Room 2418, U.S. Coast Guard Headquarters, 2100 Second Street SW., Washington, D.C.

FOR FURTHER INFORMATION CONTACT: Lieutenant Commander Frederick R. Adamchak, Office of Merchant Marine Safety (G-MHM/14), Room 1405, U.S. Coast Guard Headquarters, 2100 Second Street, S.W., Washington, D.C. 20593 (202-426-1217).

SUPPLEMENTARY INFORMATION: Interested persons are invited to participate in this proposed rulemaking by submitting written views, data or arguments. Each comment should include the name and address of the person submitting the comment, reference the docket number (CGD 78-128), identify the specific section of the proposal to which each comment applies, and include sufficient detail to indicate the basis on which each comment is made. If an acknowledgment is desired, a stamped addressed postcard should be enclosed. All comments received before the expiration of the comment period will be considered before final action is taken on this proposal. No public hearing is planned, but one will be held at a time and place to be set in a later notice in the **Federal Register** if requested in writing by an interested person raising a genuine issue and desiring to comment orally at a public hearing.

This proposal has been reviewed under the Department of Transportation's "Regulatory Policies and Procedures" (44 FR 11033, February 26, 1979). A draft evaluation has been prepared and placed in the public docket.

Drafting Information

The principal persons involved in drafting this proposal are: Lieutenant Commander Frederick R. Adamchak, Project Manager, Office of Merchant Marine Safety and Mr. Michael N. Mervin, Project Attorney, Office of the Chief Counsel.

Discussion of the Proposed Regulation

The proposed rule includes a correction to Part 91, which is referenced by § 153.8. This correction to Part 91 would update the addresses of the Coast Guard district merchant marine technical offices.

The proposed rule adds carriage requirements for new cargoes and modifies some of the requirements applying to cargoes already listed. New cargoes which the Coast Guard has determined to be hazardous liquids and subject to this part, would be added to Table 1. The proposed modifications to existing carriage requirements for cargoes presently listed in Table 1 are the result of the Coast Guard's reevaluation of the hazards of some cargoes. The chemical data on which the Coast Guard evaluated new cargoes or reevaluated presently listed cargoes are in the public docket, and are available for review by interested parties. The additions and changes to Table 1 are generally in keeping with comparable additions and changes adopted by the Intergovernmental Maritime Consultative Organization to the IMCO Chemical Code, Resolution A.212 under the seventh and eighth sets of amendments.

The proposed rule would also make editorial changes to Table 1. Specifically, the entries under the columns for "Fire protection system" and "Electrical hazard group and class" are now blank for many of the cargoes listed in Table 1, which can be misleading. The proposed rule would modify these blank entries to read "NSR" under the fire protection column and "NA" under the electrical hazard column. "NSR" would mean there are "no special requirements" for a fire protection system for the particular cargo, and "NA" would mean the electrical hazard grouping and classification are "not applicable".

The proposed rule would add several new requirements including new standards for overflow control systems (§ 153.408) carriage of alkylene oxides (§§ 153.530, .1010, .1011), high velocity vents (§ 153.353) and storage of cargo samples (§ 153.935a). These and other new requirements are comparable to standards adopted by the IMCO under the sixth, seventh, and eighth sets of amendments to the IMCO Chemical Code, Resolution A.212.

The proposed rule also includes some requirements for the segregation of piping systems (§ 153.292) and liquid overpressurization protection (§ 153.365).

Finally, the proposed rule would clarify confusing provisions, delete impractical requirements, and make editorial changes.

Comments on Specific Sections

Section 153.2 Definitions. Five new definitions are proposed: "cargo area", "dedicated ballast tank", "emergency overflow device", "independent" and "separate (or separated)". These definitions are necessary to clarify the sections in which the terms are used.

The proposed rule would also make minor editorial changes to the existing definitions of "B", "L", "Letter of Compliance" and "restricted gauging system".

Section 153.7 Existing tankships. The proposed rule would make an editorial change to paragraph (b)(4) to make the wording more consistent with that of paragraph (c). Paragraphs (c) (1) and (2) of the current § 153.7 are no longer necessary since they concern implementation dates that have passed. The proposed rule would delete paragraphs (c) (1) and (2).

Paragraph (c)(6) also is no longer necessary since sufficient time has elapsed for vessel owners to upgrade their tankships to comply with Part 153. Additionally, the Coast Guard has found that many existing tankships have access openings to void spaces and tanks that cannot be enlarged to the required dimensions without impairing the hull strength. The proposed rule would revise paragraph (c)(6) by deleting the present provision allowing the Commandant (G-MHM) to grant extensions to existing tankships. The proposed rule would then add a new paragraph (c)(6) that permits an existing tankship to carry cargoes listed in Table 1 without meeting §§ 153.217 (Access to void spaces and dedicated ballast tanks), 153.219 (Access to double bottom

tanks serving as dedicated ballast tanks), and 153.254 (Cargo tank access) if the Commandant (G–MHM) determines that the vessel may do so.

Section 153.14 Requirements for flammable and combustible cargoes. Part 153 presently does not contain requirements for items such as flame screens and flame arresters needed with flammable or combustible cargoes. The proposed section would resolve this problem by requiring that the containment systems carrying flammable or combustible liquids in Table 1 meet the standards of Parts 30 to 34 of Chapter I, 46 CFR, except as prescribed by Part 153.

Sections 153.208 Ballast tank arrangements; and 153.219 Access to double bottom tanks serving as dedicated ballast tanks. The requirements of paragraph 153.208(c) are based in part on comparable requirements found in the IMCO Chemical Code. IMCO, when developing these requirements, envisioned dedicated ballast tanks as being wing tanks rather than double bottom tanks. Given this perspective, the requirements of paragraph 153.208(c) are not entirely appropriate for double bottom tanks that are also dedicated ballast tanks. Considerations such as access openings to double bottom ballast tanks from a cargo tank, and the location of vent lines, overflow tubes and sounding tubes serving double bottom ballast tanks were not evaluated when the present requirements of paragraph 153.208(c) were developed.

Arrangements for double bottom ballast tanks have been addressed in 46 CFR 32.60–10(e) for tankships handling flammable and combustible liquids. The Coast Guard believes that the arrangements found in Part 32 are not completely appropriate for chemical tankships on the basis of the increased hazards associated with many cargoes regulated under Part 153. The primary difference in the treatment of Subchapter D products and Subchapter O products centers on access openings and the use of bolted access plates from a cargo tank to a double bottom ballast tank. The Coast Guard believes that bolted access plates, while permitted under 46 CFR 32.60–10(e) for tankships handling Subchapter D products, are not appropriate for part 153. By adding a new section, § 153.219, the proposed rule would implement standards for access openings to double bottom ballast tanks that will provide the necessary level of safety.

The proposed rule, by modifying § 153.208(c) and by adding § 153.208(d), would also clarify requirements for vent lines, overflow tubes and sounding tubes to double bottom tanks serving as ballast tanks. Sections 153.208 (c) and (d) of the proposed rule are comparable to the standards in 46 CFR 32.60–10(e) for Subchapter D tankships.

The Coast Guard recognizes that existing tankships as defined under 46 CFR 153.7(a)(2) will have ballast tank arrangements that comply with 46 CFR 32.60–10(e) rather than the proposed requirements. The Coast Guard also recognizes that applying the proposed requirements in § 153.219 to an existing tankship may cause economic hardship in some cases. Under the change to paragraph 153.7(c)(6), the proposed rule would permit the Commandant (G–MHM) to authorize the carriage of cargoes regulated under Part 153 on tankships that do not meet § 153.219 on a case by case basis.

Section 153.214 Personnel emergency and safety equipment. The proposed rule would make an editorial correction to paragraph (b)(1) by changing "Mining Enforcement and Safety Administration" to the agency's new name, "Mining Safety and Health Administration". The proposed rule would also amend paragraph (c) by dropping the approval required of first aid equipment. Neither the Mining Safety and Health Administration nor the National Institute for Occupational Safety and Health approve first aid kits.

Section 153.215 Safety equipment lockers. The proposed rule would make an editorial correction to paragraph (c) of this section.

Section 153.216 Shower and eye wash fountains. This section now requires that emergency showers and eye wash fountains operate in any ambient temperature. The Coast Guard has found that even though emergency showers and eye wash fountains may work as prescribed, the temperature of the wash water may be hot enough to burn the flesh and eyes when the piping for these showers and fountains are exposed to prolonged periods of sunlight or other sources of heat. The proposed rule would require that the wash water from emergency showers and eye wash fountains be maintained at a temperature between 10°C and 35°C (50°F and 95°F).

Section 153.217 Access to enclosed spaces and dedicated ballast tanks. A dedicated ballast tank that meets the location criteria of this section is as likely to have cargo contamination and/or cargo vapors as any enclosed space in the cargo area. Since the size of access openings is specified for the safety of people who might be working in these contaminated, confined spaces, the proposed rule would make dedicated ballast tanks meet the requirements of this section.

Section 153.239 Use of cast iron. The Coast Guard believes that an absolute prohibition of the use of cast iron in cargo containment systems subject to this part is unnecessarily restrictive. Tankships have successfully used cast iron in accordance with Part 56 of this chapter without impairing the safety of the vessel. The proposed rule would permit the use of cast iron in cargo containment systems if it is used as prescribed by Part 56.

Section 153.251 Independent cargo tanks. The proposed rule would require that all independent cargo tanks meet the same sloshing load requirements, regardless of whether or not the independent tanks carry cargoes requiring independent tanks. The Coast Guard feels that all independent tanks should be designed for the same stresses and dynamic sloshing forces.

Section 153.253 Quick closing shutoff valves required with spill valves. The purpose of this section was to prevent the continued flow of cargo through a spill valve if a cargo tank were overfilled. After examining numerous complaints about this requirement, the Coast Guard agrees that a quick closing shutoff valve could generate excessive surge pressures in the transfer hoses when activated during filling operations. These surge pressures may be great enough to rupture a transfer hose. Since the potential hazards from a ruptured cargo hose exceed any benefits the existing requirement might provide, the proposal would delete this section. See related remarks under §§ 153.284 and 153.408.

Section 153.281 Piping to required independent tanks. The proposed rule would reword this section more concisely. The requirements of this section would be unchanged.

Section 153.283 Valving for cargo piping. The proposed rule would add a new paragraph (f) to this section. Paragraph (f) is designed to prevent the loss of cargo in a fire by requiring a "positive shutoff" valve where the valve might release cargo if it deteriorated in the fire. A positive shutoff valve would be a type that minimized cargo loss under these circumstances. A manual stop valve, which is currently acceptable under this section, would not necessarily be of this type. The Coast Guard has recently undertaken a regulatory project that will develop performance standards and provide more concise requirements for "positive shutoff valves". This project (CGD 79–159, Tank stop valves and their controls and indicators) will revise appropriate sections of 46 CFR Part 56 and 58.

Section 153.284 Characteristics of required quick closing valves. The proposed rule would add the requirement that a quick closing valve be a positive shutoff valve. Since the proposed rule would delete § 153.253, quick closing valves will only be required under § 153.530(n), special requirements for alkylene oxides. Quick closing valves are intended to isolate a cargo containment system in the event of an emergency such as fire during transfer operations. A positive shutoff valve will minimize cargo leakage and better isolate the cargo tank and its contents. The comments under § 153.253 mentioned the possible generation of excessive surge pressures in transfer hoses upon activation of quick closing valves during filling operations. These surge pressures would occur as a result of the valve closing in a period of 30 seconds or less while the shore-side cargo pumps would continue operating. Under this proposed rule, quick closing valves would only be required for the discharge piping of alkylene oxide containment systems. For discharge piping, the transfer hose will be downstream of the quick closing shutoff valve and will not be subject to any surge pressures generated. Also, the shipboard transfer pumps and quick closing shutoff valves can be activated simultaneously to prevent the generation of surge pressures in the discharge piping. See related remarks under §§ 153.253 and 153.408.

Section 153.292 Separation of piping systems. The separation of cargo piping systems usually necessitates the removal of valves and the blanking of the open pipe ends. This procedure can allow cargo to leak in the work area when removing a valve and installing blank flanges. A cargo tank or enclosed space is usually not well ventilated. There have been a number of cases where people have died from exposure to cargo vapor while changing connections in non-ventilated areas. The proposed rule would require these separation arrangements to be located on the weatherdeck or within cargo handling spaces, which are ventilated.

Section 153.296 Emergency shutdown stations. The intent of paragraph (c) was to require two emergency shutdown stations with access to one of the two stations from any part of the weatherdeck if there should be a break in the cargo piping system or transfer hose. The proposed rule would reword paragraph (c) to clarify this point.

Section 153.314 Ventilation of spaces not usually occupied; § 153.932(b)(2) Goggles and protective clothing; and § 153.934 Entry into spaces containing cargo vapor. Cargo vapors are likely to accumulate in any enclosed space in the cargo area, rather than being limited to those spaces now specified in these sections. By making any enclosed space in the cargo area subject to these sections, the proposed rule would enhance personnel safety.

Section 153.336 Special cargo pump or pumproom requirements. The proposed rule would require that cargo pumprooms subject to this section have a low pressure air system or meet requirements specified by the Commandant (G–MHM). Section 153.934 requires the use of breathing equipment when entering a cargo handling space that is contaminated with toxic vapors or depleted of oxygen. Cargo pumprooms in particular must be entered on a frequent basis, and are also prone to have high concentrations of cargo vapor. Since cargoes referenced to this section have particularly hazardous vapors, the Coast Guard feels that air supply systems in addition to ventilation systems are needed in pumprooms subject to this section.

Section 153.340 Venting system design. Section 153.280 requires that cargo piping systems meet the standards of Part 56 and certain sections of Part 38 of Title 46 CFR. The standards found in Part 56 and Part 38 include material specifications and criteria for the maximum allowable working pressures for piping systems. Since § 153.2 has separate definitions for "cargo piping systems" and "venting systems", § 153.280 does not apply to cargo tank venting systems. Nevertheless, a venting system fitted with either a pressure-vacuum (PV) valve or a safety relief (SR) valve should be designed for the conditions found in the tank up to the PV or to SR valve. By requiring that Part 56 be met, the proposed rule would ensure that this condition is satisfied.

Section 153.353 High velocity vents. Since 46 CFR Part 153 was published as a final rule, the Coast Guard, through IMCO, has developed standards for high velocity vents. Test data suggest these standards will attain vapor dispersion that is comparable to or better than that from 4m or B/3 vents. The proposed rule would specify these standards for high velocity vents by revising § 153.353. The proposed rule would also slightly modify the wording of § 153.350 (Location of B/3 vent discharges) and § 153.351 (Location of 4m vent discharges) to permit the use of high velocity vents as prescribed under § 153.353. The proposed rule would not change the requirements of §§ 153.350 or 153.351.

Section 153.361 Arrangements for removal of valves from venting systems having multiple relief valves. The proposed rule would modify the wording of this section for clarification. The requirements of this section would not be changed.

Section 153.365 Liquid overpressurization protection. Under § 153.935 all hatches and openings to cargo tanks must be closed during the loading of cargo that requires either closed or restricted gauging. From the minimum carriage requirements in Table 1 of Part 153, any cargo requiring closed or restricted gauging must also be carried in a tank having either a 4m or B/3 vent riser. These two requirements create the possibility of damaging a cargo tank if it is overfilled and, therefore, establish the need for liquid overpressurization protection during loading operations.

Liquid overpressurization protection was initially provided for some cargoes by a tank overfill control system meeting the standards of § 153.408. With most cargoes, however, tank overfill controls systems are not required; consequently, liquid overpressurization protection is not specifically addressed in Part 153.

Section 56.50–85(a)(10) of Title 46 CFR does address the problem of liquid overpressurization. Since most of the cargoes listed in Table 1 of Part 153 require either closed or restricted gauging, the Coast Guard considers that specific standards for liquid overpressurization protection should be included in Part 153. The proposed rule would establish these standards by adding § 153.365, and making minor revisions to §§ 153.294(b), 153.968(b)(2) and 153.977.

Section 153.366 Spill valves. Liquid overpressurization arrangements that employ spill valves or emergency overflow devices will relieve a liquid head on a cargo tank by draining the excess cargo from the tank. Collection containers were intended to catch this excess cargo and prevent it from spilling onto the deck or overboard. The Coast Guard considers any container that would hold all excess cargo collected by relieving a tank during loading conditions would be too large to be practical. For this reason the proposed rule would delete the requirement for collection containers. The proposed rule would also delete the requirement that spill valves meet 46 CFR 162.017. The present standards in § 162.017 are not appropriate for spill valves as mentioned in Part 153.

Section 153.407 Special requirements for sounding tube gauges. The proposed rule would add the word "gauge" after "28 kPa" for clarification. The proposed rule would also permit sounding tubes to

have one perforation to equalize the pressures in the vapor space of the tank and in the vapor column of the sounding tube. The pressure of the vapor column in the tube is relieved whenever the sounding tube cap is removed. This sudden release of pressure may cause the liquid in the sounding tube to rise rapidly enough to overflow the sounding tube, particularly when the tank is nearly liquid full. This potential hazard can be avoided by providing a means of equalizing the pressure of the vapor column in the sounding tube and the pressure of the tank vapor space. The Coast Guard feels a single hole will accomplish this purpose and still restrict the release of cargo vapors from the tank.

Section 153.408 Tank overflow controls. Certain cargoes regulated under Part 153 must be carried in containment systems having tank overflow control systems.

This section, as presently worded, requires tank overflow control systems that must close the tank filling lines automatically and before the tank is filled to 98 percent of its capacity. This requirement necessitated the use of an automatic closing valve which could create the same problems with surge pressures in the transfer lines as discussed in the comments for §§ 153.253 and 153.284. Consequently, many people have questioned the safety and reliability of tank overflow control systems that employ automatic closing valves. IMCO, in the eighth set of amendments to the IMCO Chemical Code, Resolution A.212, recommended new standards for tank overflow control systems. IMCO recommended delaying implementation of these standards until 1 October 1982 in order to permit additional study of this matter. The Coast Guard agrees with the approach taken at IMCO and has accordingly included a proposed revision to § 153.408 which basically adopts the IMCO recommendations. The proposed rule would establish performance standards for tank overflow control systems. The proposed rule would not necessarily require the use of automatic closing valves in tank filling lines but would allow that option if the owner chose. The proposed rule would not require the automatic closing valve to be a quick closing shutoff valve, but would require, instead, that the automatic valve close without creating excessive surge pressures. The Coast Guard feels the proposal will give tankship owners flexibility in meeting these standards.

Section 153.430 Heat transfer systems; general. Paragraph (b) of this section presently requires a heat transfer system to have valving that isolates the heating system from all other cooling and heat transfer systems. The term "isolate" does not explicitly state whether operational means can be used to "isolate" heat transfer systems. The Coast Guard considers operational methods to be a sufficient manner for isolating heat transfer systems. Since the proposed rule includes a definition under § 153.2 for "separate" which includes operational means of isolation, the term "separate" replaces "isolate" in this section.

Section 153.432 Cooling systems. Cooling systems are only specifically required under § 153.530(f), special requirements for alkylene oxides. Cargoes with high vapor pressures such as isoprene, iso-propylamine and vinylidene chloride must often be refrigerated to prevent overpressurization of the cargo tank, depending upon the maximum design pressure of the tank. Since Part 153 does not specifically require cooling system for cargoes such as these, containment systems for these cargoes are not required under § 153.432 to have equivalent standby units for the cooling systems. The Coast Guard considers, however, that since cooling systems are used to maintain the vapor pressure in the tank within the design constraints of the tank, all cargo cooling systems should have equivalent standby units.

Section 153.434 Heat Transfer coils within a tank. If there is a break or failure of a heating coil in a cargo tank, it is safer to have heat transfer fluid leak into the tank rather than cargo into the heating system. Cargo leaking into a heat transfer system could contaminate other ship service systems. Maintaining the heat transfer fluid at a pressure higher than the gravity pressure head exerted on the tank heating coils will prevent cargo from leaking into the heat transfer system. This requirement seems overly restrictive when a cargo tank is empty and there is no gravity pressure head exerted on the heating coils or when a tank is in ballast and there is no danger of cargo contamination. The proposed rule would modify this section by requiring the heat transfer fluid to be at a higher pressure only when the tank contains cargo.

Section 153.436 Heat transfer fluid. Requiring the Commandant (G–MHM) to approve heat transfer fluids for use with particular cargoes is impractical from the standpoint of compliance and enforcement. The intent of § 153.436 is to ensure that the heat transfer fluid does not chemically react with any cargoes that would be carried in tanks serviced by the heating system. The Coast Guard believes that this intent is better satisfied by requiring the vessel owner to demonstrate the heat transfer fluid is compatible with cargoes carried. The proposed rule would make this change.

Section 153.440 Cargo temperature sensors required. Many cargoes are heated or refrigerated for commercial reasons rather than for vessel safety. The Coast Guard intends to require temperature sensors only when a cargo temperature must be controlled for safety. This can be done most easily by making the requirements of this section apply only to specific cargoes, the proposed rule would change this section so that it applies to a cargo only when listed in Table 1. The requirements concerning the number or location of these temperature sensors are unchanged.

Section 153.464 Fusible elements. Upon reevaluation of the hazards presented by those flammable and combustible liquids subject to this part, the fusible elements required under this section do not substantially enhance vessel safety. The proposed rule would delete this requirement.

Section 153.467 Ventilation systems for flammable cargoes. The purpose of this section is to prevent the placement of electrical equipment in spaces or areas where flammable vapors may accumulate. The proposal would apply this section only to those ventilation systems having electrical equipment or inlets in prescribed hazardous locations. These hazardous locations are defined in Subchapter J of Title 46 CFR. It should be noted that the reference to § 111.105–1 is based upon the Notice of Proposed Rulemaking for the Revision of Subchapter J, Electrical Engineering Regulations, which was published in the **Federal Register**, Vol. 42, No. 123 on June 27, 1977. This proposal to revise Part 153 may be changed to reflect any changes to § 111.105–1 that may eventually appear in the final rulemaking for Subchapter J.

Section 153.520 Special requirements for carbon disulfide; § 153.545 Special requirements for liquid sulfur; and § 153.555 Special requirements for inorganic acids. The proposal would permit the use of electrical equipment near cargo containment systems for carbon disulfide, liquid sulfur, and inorganic acids if the equipment installation met § 111.105–31 of Title 46, CFR. The requirements of §§ 153.520, 153.545, and 153.555 would then be consistent with the Electrical Engineering Regulations of Subchapter J. It should be noted that the reference to § 111.105–31 is based upon the Notice of Proposed Rulemaking for the Revision of Subchapter J, Electrical Engineering

Regulations, which was published in the Federal Register, Vol. 42, No. 123 on June 27, 1977. These proposed changes to Part 153 may be revised to reflect any changes to § 111.105–31 that may eventually appear in the final rulemaking for Subchapter J.

Section 153.525 Special requirements for unusually toxic cargoes; and 153.1020 Unusually toxic cargoes. The cargoes referenced to these sections are toxic enough to cause harm if they contaminate cargo systems for less toxic cargoes. The likelihood of this happening can be minimized if piping and venting systems for cargoes referenced to these sections are either independent or separate, as defined in § 153.2 of the proposed rule. The Coast Guard considers that it is overly restrictive to require segregation solely by design as would be the case if the piping and venting systems were independent. The desire level of safety can also be achieved if operational means for segregation are permitted as would be the case if piping and venting systems are separate. The proposed rule would make this change by amending paragraph (a) of both §§ 153.525 and 153.1020.

The Coast Guard considers that § 153.525(d) may be unnecessarily restrictive by prohibiting any part of a heat transfer system for cargoes referenced to this section from entering the engine room. This paragraph was intended to prevent cargo or cargo vapors from getting into machinery and other working spaces. This intent can be reasonably met if such a heating system has two individual modes of protection or means of detecting contamination of other systems. This can be accomplished for example by maintaining two-wall separation between the heat transfer fluid and the cargo. For heat transfer systems having one wall separation, the second means of protection could be a sampling system for the heat transfer fluid or a design that prevented contamination. The Coast Guard considers that the proposed rule would establish a more consistent level of protection for heat transfer systems subject to this section.

Seciton 153.526 Toxic vapor detectors. Toxic vapor detectors are not commercially available for all of the cargoes referenced to this section. In situations where toxic vapor detectors are not commercially available and the cargo is piped through a cargo pumproom during loading or discharge operations, the Coast Guard considers that an equivalent standard of safety can be provided if the pumproom satisfies the proposed standards for § 153.336(b). The proposed rule would permit this equivalent standard by adding § 153.526(b).

Section 153.527 Toxic vapor protection. A pressure demand respiratory device is usually interpreted to mean a breathing device of the type required under § 153.214. A device of this type is not practical as an escape device since it is bulky and takes time for the wearer to put on and begin to operate. In order to avoid misinterpretation, the proposed rule would specify that an emergency escape breathing apparatus be supplied for each crew member rather than a pressure demand respiratory device. The term "emergency escape breathing apparatus" more properly describes a portable, compact device that can be activated quickly and will provide a limited supply of air. The proposed rule also changes the reference from the Mining Enforcement and Safety Administration to the Mining Safety and Health Administration.

Where the emergency escape breathing apparatus does not protect the eyes from irritating vapors, the Coast Guard believes a set of goggles should also be required for each crew member in the event of a fire or cargo release. Since heavy concentrations of smoke or cargo vapors could be expected under these conditions, crew members must be able to see as well as breathe in order to escape. Even though goggles will not increase visibility, they will protect an individual's eyes from smoke and cargo vapor. The proposed rule would require goggles in addition to the emergency breathing apparatus if the breathing apparatus does not protect the eyes from vapor.

Although § 153.527 is an existing provision, it is not referenced as a special requirement for any cargo listed in table 1. The proposed rule would apply this section to approximately forty cargoes now listed in table 1 and to four new cargoes to be added to table 1.

Section 153.530 Special requirements for alkylene oxides; § 153.1010 Alkylene oxides; and § 153.1011 Changing containment systems and hoses to and from alkylene oxide service. The proposed rule would incorporate changes adopted by IMCO in the eighth set of amendments to the IMCO Chemical Code, Resolution A.212, for the carriage of alkylene oxides. The changes adopted by IMCO contain most of the existing requirements for alkylene oxides presently in Part 153. Requirements for independent tanks, maintaining the oxygen content in spaces adjacent to cargo tanks below a specified level, and a number of other new requirements adopted by IMCO differ from or exceed existing standards in Part 153. The Coast Guard feels that the standards adopted by IMCO enhance vessel safety and proposes to amend Part 153 to make the alkylene oxide carriage requirements in Part 153 comparable to IMCO's. The proposed rule would amend §§ 153.530, 153.1010 and 153.1011 as follows:

(a) Section 153.530(e) and (g). The spelling of the word "gauge" would be corrected.

(b) Section 153.530(f). The purpose of this requirement is to prevent overpressurization of the cargo tank and the venting of cargo to the atmosphere. Rather than specifying a particular temperature, the Coast Guard considers that this purpose is better achieved by requiring cooling systems to maintain the cargo at a temperature below the temperature at which the vapor pressure of the alkylene oxide equals the set pressure of the PV valves.

(c) Section 153.530(h). In addition to the cargo containment system, spaces adjacent to integral cargo tanks and hold spaces for independent tanks which must have inerting systems will be required to have arrangements for monitoring the oxygen content of these spaces. This change will make Part 153 comparable to the IMCO Chemical Code.

(d) Section 153.530(l). Void spaces adjacent to intergral cargo tanks are specifically added to the list of spaces required to have an inert gas system under this paragraph. The Coast Guard believes that void spaces present the same hazards as cofferdams, cargo tanks and double bottom spaces which are all specifically included under this paragraph. The proposed rule would clarify this paragraph by adding void spaces to the list of spaces requiring an inert gas system.

(e) Section 153.530(n). See remarks under § 153.284.

(f) Section 153.530(q). Since alkylene oxides are extremely flammable and have wide flammability limits, leakage of alkylene oxides presents a particularly hazardous situation. Since independent cargo tanks afford greater containment integrity than integral gravity tanks, the Coast Guard believes that independent cargo tanks should be required for alkylene oxide containment systems. The proposed rule would require independent cargo tanks on vessels contracted after 1 January 1982. The proposed rule makes proper allowances for vessels now under construction or in alkylene oxide service by applying this standard only to vessels contracted after 1 January 1982. This approach is consistent with the action taken by IMCO.

(g) Section 153.1010(a). Because alkylene oxides can react violently with many cargoes, the Coast Guard proposes that the person in charge verify the segregation of alkylene oxide piping from other cargo piping before each loading. Blank flange and spectacle flange connections would be required to have wire and seals to prevent accidental changes.

(h) Section 153.1010(d). Alkylene oxides have a wide range of explosive limits. The flammability hazards of alkylene oxides can be reduced by maintaining the oxygen content of alkylene oxide cargo tanks and those spaces specified in § 153.530(k) and (l) below 2% by volume.

(i) Section 153.1011. The existing tank washing requirements do not apply where an alkylene oxide is loaded into a cargo containment system that last carried a cargo other than one listed in § 153.1011(b). The reactive nature of alkylene oxides require that containment systems be free of rust and residue from many cargoes other than alkylene oxides. Nevertheless, the requirement that alkylene oxides not be loaded into containment systems that within the previous five loadings carried a cargo violently reactive with alkylene oxides seems too restrictive. Three loadings of non-reactive cargoes will remove any traces of cargoes loaded before. In making these changes, the proposed rule would establish tank washing requirements that account for all previous loading situations. The proposed rule would also add to the list of cargoes which are particularly reactive with alkylene oxides.

Section 153.602 Special requirements for cargoes reactive with water. Water and moisture can enter the vent lines and vapor space of a cargo containment system through air inlets to PV valves if these inlets are located on or near the weatherdeck. This situation is hazardous if the cargo tank carries a cargo which reacts with water. This hazard can be avoided if the air inlets are located high enough off the weatherdeck so that they will stay dry. The proposed rule would require that air inlets be a minimum height above the weatherdeck for cargo containment systems that carry water-reactive cargoes.

Section 153.808 Examination required for a Letter of Compliance. Since Letters of Compliance are now issued by Coast Guard inspection offices as well as the Commandant (G–MHM), the proposed rule would amend this section to reflect this practice.

Section 153.809 Procedures for having the Coast Guard examine a vessel for a Letter of Compliance. Even though the Commandant (G–MHM) will arrange a Letter of Compliance examination as prescribed by this section, the actual details and arrangements for conducting the examination are left to the discretion of the local Coast Guard inspection office in the port of call. The proposed rule would require the vessel owner to notify the local Coast Guard inspection office in the port of call at least 24 hours prior to the vessel's arrival to facilitate scheduling of the examination.

Section 153.905 Regulations required to be on board. Part 34 of Title 46 CFR prescribes design standards for firefighting systems on tankships, whereas Parts 35 and 153 of Title 46 CFR prescribe or include operational requirements for tankships. The Coast Guard proposes that regulations prescribing opertional standards for tankships subject to Part 153 be maintained on the vessel; however, regulations that prescribe design standards only are not necessary to be maintained on board for safe operation of the vessel. The proposed rule would delete the requirement that Part 34 be maintained on board tankships subject to Part 153.

Section 153.935 Opening of tanks and cargo sampling. The proposed rule would correct the reference to § 153.404 in paragraph (c).

Section 153.935a Storage of cargo samples. Improper storage of cargo sample bottles can result in breakage and the possible mixing of incompatible cargo samples. The proposed rule would minimize this possibility by prescribing standards for stowing cargo samples.

Section 153.940 Standards for marking of cargo hose. The proposed rule would make an editorial correction to paragraph (e).

Section 153.957 Person in charge of cargo transfer. The proposed rule would clarify paragraph (a) of this section.

Section 153.963 Incompatible cargo. The proposed rule would better define acceptable methods of attaining double wall separation.

Section 153.974 Ventilation of cargo handling spaces and pumprooms during cargo transfer. Part 153 prescribes design standards for ventilation systems in §§ 153.312 and 153.316 but does not prescribe operating requirements for ventilation systems. The Coast Guard believes that ventilation systems must be operating as prescribed by §§ 153.312 and 153.316 for proper protection of shipboard personnel, particularly during cargo transfer operations when cargo vapors are most likely to accumulate in a pumproom or cargo handling space.

Section 153.975 Preparations for cargo transfer. The proposed rule would amend paragraph (f) by requiring that both the high level alarms and overflow control system are functioning properly when cargo is loaded. Cargoes which require high level alarms or overflow controls are either unusually toxic products or severe pollutants. These cargoes present particular hazards if they are spilled by overfilling a tank. In order to minimize the chance of a spill, high level alarms and overflow controls must be operating properly at all times.

Section 153.980 Isolation of automatic closing valves. The proposed rule would add a new section which gives a tankship operator the option to by-pass automatic valves when cargoes not requiring overflow controls are carried. This section would ensure automatic valves are by-passed safely.

Section 153.1002 Special operating requirements for heat sensitive cargoes. Certain cargoes polymerize, decompose or ignite when exposed to heat. These conditions can rupture the cargo tank. This danger can be avoided by protecting heat sensitive cargoes as prescribed in the proposed rule.

Section 153.1004 Inhibited and stabilized cargoes. Certain cargoes must be inhibited or stabilized to prevent uncontrolled polymerization or decomposition of the cargo. The effectiveness of inhibitors or stabilizers can be adversely affected by contaminants in the cargo containment system or if the cargo solidifies or crystallizes and subsequently remelts. The proposed rule would require safeguards to control contamination and prevent solidification or crystallization.

Section 153.1025(b)(1) Motor fuel antiknock compounds. The Occupational Safety and Health Administration (OSHA) has established under 29 CFR 1910.1000, Table Z–1, an eight hour, time weighted average, worker exposure limit of 0.075 mg/m^3 for tetraethyl lead (as Pb). This value is based upon documentation obtained from the American Conference of Governmental Industrial Hygienists and the American Industrial Hygiene Association. The Coast Guard has evaluated this documentation and concluded that the OSHA standard of 0.075 mg/m^3 is a reasonable exposure limit. The proposed rule would amend paragraph (b)(1) to reflect this value.

Section 153.1052 Carriage of other cargoes in acid tanks. The proposed rule would reword this section but would not change requirements.

Appendix I—List of cargoes not regulated under Part 151, Part 153 or Subchapter D. The proposed rule would update this list of cargoes.

Appendix III—Metric units used in Part 153. The proposed rule would correct a conversion factor.

In consideration of the foregoing, it is proposed to amend Chapter I of Title 46, Code of Federal Regulations, as follows:

PART 30—GENERAL PROVISIONS

§ 30.25-1 [Amended]

1. By deleting "Propyl Ether (iso-)." from table 30.25-1.

PART 91—INSPECTION AND CERTIFICATION

2. By revising § 91.55-15 (a)(3)(i)-(a)(3)(v) to read as follows:

§ 91.55-15 Procedure for submittal of plans.

(a) * * *

(3) * * *

(i) Commander, 3rd Coast Guard District (mmt), Governors Island, New York, N.Y. 10004, for the geographical area covered by the 1st and 3rd Coast Guard Districts.

(ii) Commander, 5th Coast Guard District (mmt), Federal Building, 431 Crawford St., Portsmouth, VA. 23705, for geographical area covered by the 5th Coast Guard District.

(iii) Commander, 8th Coast Guard District (mmt), Hale Boggs Federal Building, 500 Camp St., New Orleans, LA. 70130, for the geographical area covered by the 2nd, 7th and 8th Coast Guard Districts.

(iv) Commander, 9th Coast Guard District (mmt), 1240 East Ninth Street, Cleveland, Ohio 44199, for the geographical area covered by the 9th Coast Guard District.

(v) Commander, 12th Coast Guard District (mmt), 630 Sansome St., San Francisco, CA. 94126, for the geographical area covered by the 11th, 12th, 13th, 14th and 17th Coast Guard Districts.

PART 153—SAFETY RULES FOR SELF-PROPELLED VESSELS CARRYING HAZARDOUS LIQUIDS

3. By revising the following definitions in § 153.2 to read as follows:

§ 153.2 Definitions.

* * * * *

"B" means the breadth of the vessel and is defined in § 42.13-15(d) of this chapter.

* * * * *

"L" means the length of the vessel and is defined in § 42.13-15(a) of this chapter.

* * * * *

"Letter of Compliance" means a letter issued by the Coast Guard permitting a foreign flag tankership to carry a bulk cargo regulated under this part.

* * * * *

"Restricted gauging system" means a method of gauging the amount of cargo in a tank through an opening of limited size that restricts or prevents the release of cargo vapors from the tank vapor space.

* * * * *

4. By amending § 153.2 by adding in alphabetical sequence the following definitions:

§ 153.2 Definitions.

* * * * *

"Cargo area" means that part of a vessel that includes the cargo tanks, spaces adjacent to the cargo tanks and that part of the deck over the cargo tanks and adjacent spaces.

* * * * *

"Dedicated ballast tank" means a tank that is used only for ballast.

* * * * *

"Emergency overflow device" means a device used to relieve liquid from a containment system if overfilled during loading.

* * * * *

"Independent", as applied to a cargo piping, venting, heating or cooling system means that the system is connected to no other system, and has no means available for connection to another system.

* * * * *

"Separate" and "separated", as applied to a cargo piping venting, heating or cooling system, means either an independent system or one that may be disconnected from all other systems by—

(a) Removing spool pieces or valves and blanking the open pipe ends; or

(b) Blocking each system interconnection with two blind flanges in series and providing a means of detecting leakage into the pipe section between the flanges.

* * * * *

5. By revising § 153.7(b)(4) introductory text and by revising § 153.7(c) to read as follows:

§ 153.7 Existing tankships.

(b) * * *

(4) The Commandant (G-MHM) considers on a case by case basis endorsing the permit of an existing tankship to carry a cargo listed in table I if—

* * * * *

(c) An existing tankship must meet all the requirements of this part except as provided in paragraphs (c) (3), (4), (5) and (6) of this section.

(1) [Reserved]

(2) [Reserved]

(3) The Commandant (G-MHM) considers on a case by case basis endorsing as a type II containment system one that fails to meet §§ 153.21, 153.231(b), and 153.234 if the tankship and containment system meet the following minimum standards:

(i) The tankship has a loadline certificate.

(ii) The cargo tank is not part of the tankship's shell plating.

(iii) The distance between the bottom plating of the cargo tank and the bottom shell plating of the tankship is at least 76 cm measured parallel to the vertical axis of the tankship.

(4) The Commandant (G-MHM) considers on a case by case basis endorsing a containment system as a type II containment system if—

(i) The containment system is modified to meet § 153.231(b) by adding double bottoms or wing tanks; and

(ii) The tankship can survive the damage described in §§ 153.32 and 153.34 to those parts of the tankship other than machinery spaces.

(5) The Commandant (G-MHM) considers on a case by case basis endorsing as a type III containment system one that does not meet §§ 153.22 and 153.234 if the tankship has a loadline certificate.

(6) The Commandant (G-MHM) considers on a case by case basis endorsing the tankship to carry cargoes listed in Table 1 of this part if the tankship does not meet §§ 153.217, 153.219 and 153.254.

Table 1— [Amended]

6. By amending the cargo name entry in table 1 for "1,1- or 1,2-Dichloropropane" to read "1,1-, 1,2- or 1,3-Dichloropropane".

7. By amending the certain table 1 column entries for propylene oxide to read as follows:

Cargo name	Vent height	Special requirements
* * * * *		
Propylene oxide *	B/3	.252, .408, .440, .500, .526, .530, .1010, .1011
* * * * *		

8. By amending the table 1 column entry under "Fire protection system" to read "NSR" for the following cargoes:

Carbon tetrachloride
Caustic potash solution
Caustic soda solution
Chloroform
Chlorosulfonic acid
Dichloromethane
Ethylene dibromide
Hydrochloric acid
Nitric acid (70 pct or less)
Oleum
Pentachloroethane
Phosphoric acid

Sodium hydrosulfide solution (45 pct or less)
Sodium hypochlorite solution (15 pct or less)
Sulfur (liquid)
Sulfuric acid
1,1,2,2-Tetrachloroethane

9. By adding ".316" in proper numerical sequence to the "Special requirements" column of table 1 for the following cargo:

(iso-, n-, sec-, tert-) Butylamine

10. By deleting ".336" from the "Special requirements" column of table 1 for the following cargoes:

Acetonitrile
Acrylonitrile
Allyl alcohol
Allyl chloride
Aniline
Benzyl chloride
(iso-, n-, sec-, tert-) Butylamine
Chloroprene
Crotonaldehyde
Epichlorohydrin
Ethylene chlorohydrin
(ortho-, para-) Nitrotoluene
Oleum
Pentachloroethane
1,2,2,2-Tetrachloroethane

11. By adding ".440" in proper numerical sequence to the "Special requirements" column of table 1 for the following cargoes:

Ethyl ether
Isoprene
Sulfur (liquid)
Vinyl ethyl ether
Vinylidene chloride

12. By adding ".527" in proper numerical sequence to the "Special requirements" column of table 1 for the following cargoes:

Acetic acid
Acetic anhydride
Acetone cyanohydrin
Acrylonitrile
Allyl alcohol
Allyl chloride
Ammonium hydroxide (28 pct or less NH_3)
Benzyl chloride
(iso-, n-, sec-, tert-) Butylamine
Carbon disulfide
Chloroform
Chloroprene
Chlorosulfonic acid
Crotonaldehyde
1,1-Dichloroethane
1,3-Dichloropropene
Diethylamine
Diisopropylamine
Dimethylamine (40 pct or less)
Epichlorohydrin
Ethyl acrylate
Ethylene chlorohydrin
Ethylene dibromide
Ethyl ether
Formaldehyde solution (37 to 50 pct)
Formic acid
Hydrochloric acid
Methyl acrylate
Motor fuel anti-knock compounds (containing lead alkyls)
Nitric acid (70 pct or less)
Oleum
Propionic acid
Toluene diisocyanate
Triethylamine
Vinylidene chloride
Vinyl ethyl ether

13. By adding ".602" in proper numerical sequence to the "Special requirements" column of table 1 for the following cargoes:

Chlorosulfonic acid
Oleum
Sulfuric acid
Toluene diisocyanate

14. By changing ".912(a)" to read ".912(a)(1)" in the "Special requirements" column of table 1 for the following cargoes:

Acrylic acid
Acrylonitrile
(iso-, n-) Butyl acrylate
Butyl methacrylate
Chloroprene
(iso-, n-) Decyl acrylate
Ethyl acrylate
2-Ethylhexyl acrylate
Ethyl methacrylate
2-Hydroxyethyl acrylate
Isoprene
Methyl acrylate
Methyl methacrylate
(alpha-) Methyl styrene
Vinyl acetate
Vinylidene chloride
Vinyl ethyl ether
Vinyl toluene

15. By changing ".912(b)" to read ".912(a)(2)" in the "Special requirements" column of table 1 for the following cargoes:

Acetone cyanohydrin
Benzyl chloride
Tetrahydrofuran

16. By adding ".1002 (a), (b)" in proper numerical sequence to the "Special requirements" column of table 1 for the following cargoes:

(iso-, n-) Butyl acrylate
Butyl methacrylate
Chloroprene
(iso-, n-) Decyl acrylate
Ethyl acrylate
2-Ethylhexyl acrylate
Ethyl methacrylate
2-Hydroxyethyl acrylate
Isoprene
Methyl acrylate
Methyl methacrylate
(alpha-) Methyl styrene

17. By adding ".1002 (a), (b), (c)" in proper numerical sequence to the "Special requirements" column in table 1 for "Acetone cyanohydrin".

18. By adding ".1002(a)" in proper numerical sequence to the "Special requirements" column in table 1 for "Acrylic acid".

19. By adding ".1004" in proper numerical sequence to the "Special requirements" column of table 1 for the following cargoes:

Acetone cyanohydrin
Acrylic acid
Acrylonitrile
Benzyl chloride
(iso-, n-) Butyl acrylate
Butyl methacrylate
Chloroprene
(iso-, n-) Decyl acrylate
Ethyl acrylate
2-Ethylhexyl acrylate
Ethyl methacrylate
2-Hydroxyethyl acrylate
Isoprene
Methyl acrylate
Methyl methacrylate
(alpha-) Methyl styrene
Tetrahydrofuran
Vinyl acetate
Vinylidene chloride
Vinyl ethyl ether
Vinyl toluene

20. By amending the entries under "Special requirements" column of table 1 for the cargoes listed below to read as follows:

Cargo name	Special requirements
* * * * *	
Carbon tetrachloride	.316, .409, .525., 526, .527, .1020
* * * * *	
Ethylene dichloride	.408, .526
* * * * *	
Styrene	.912(a)(1), .1002(a),(b), .1004
* * * * *	
Tricresyl phosphate (containing 1 pct or more of the ortho isomer)	.408, .525(a)(e), .1020
* * * * *	

21. By amending the table 1 column entry under "Electrical hazard group and class" to read "I–B" for the following cargoes:

Chlorosulfonic acid
Hydrochloric acid
Nitric acid (70 pct or less)
Oleum
Phosphoric acid
Sulfuric acid

22. By amending the table 1 column entry under "Electrical hazard group and class" to read "I–C" for the following cargoes:

(n-)Butyl ether
Dibutylamine
2-Ethyl-3-Propyl acrolein
Furfural
Paraldehyde
Sulfur (liquid)
Vinyl ethyl ether

23. By amending the table 1 column entry under "Electrical hazard group and class" to read "I–D" for the following cargoes:

(iso-, n-, sec-, tert-) Butylamine
Butyl methacrylate

Chloroprene
Cyclohexylamine
1,1-Dichloroethane
Dimethylformamide
Ethyl methacrylate
Formic acid
Isoprene
(alpha-) Methyl styrene
Motor fuel anti-knock compounds (containing lead alkyls)
Pyridine

24. By amending the table 1 column entry under "Electrical hazard group and class" to read "NA" for the following cargoes:

Acetone cyanohydrin
Adiponitrile
Aminoethylethanolamine
Aniline
Benzyl chloride
Carbolic oil
Carbon tetrachloride
Caustic potash solution
Caustic soda solution
Chloroform
Creosote
Cresols
(iso-, n-) Decyl acrylate
Dichlorobenzene
Dichloromethane
Diethanolamine
Diethylenetriamine
Diethylethanolamine
Dimethylethanolamine
Diisopropanolamine
Ethanolamine
Ethylene cyanohydrin
Ethylene chlorohydrin
Ethylene dibromide
2-Ethylhexyl acrylate
2-Hydroxyethyl acrylate
2-Methyl-5-Ethyl pyridine
Naphthalene (liquid)
(mono-) Nitrobenzene
(ortho-, para-) Nitrotoluene
Penetachloroethane
Phenol
Phthalic anhydride (liquid)
(iso-, n-) Propanolamine
Propionic anhydride
Sodium hydrosulfide solution (45 pct or less)
Sodium hypochlorite solution (15 pct or less)
1,1,2,2-Tetrachloroethane
Tetraethylenepentamine
Toluene diisocyanate
Tricresyl phosphate (containing 1 pct or more of the ortho isomer)
Triethanolamine
Triethylenetetramine

25. By adding the following footnote at the end of table 1 to read as follows:

For details see these sections:

* * * * *

[9] 153.530(q).

* * * * *

26. By amending the Notes on table 1 on Fire protection system and Electrical hazard group and class to read as follows:

Notes on Table 1

* * * * *

Fire protection system—the type of fire protection system is shown where:

A is a foam system for water soluble cargoes (polar solvent foam),

B is a foam system for water insoluble cargoes (non-polar solvent foam),

C is a water spray system,

D is a dry chemical system, and

NSR means there is no special requirement for a fire protection system.

When table 1 specifies more than one type of fire protection system, any one of the listed options will satisfy the requirements for a fire protection system under this part. Unless table 1 specifies a dry chemical (D) system as an option, a dry chemical system may be substituted for an A or B type system only if the Commandant (G-MMT) approves the substitution.

* * * * *

Electrical hazard group and class—This column is for use with Subchapter J (Electrical Engineering) of this chapter.

Under this column NA means that the electrical hazard groupings and classes in Subchapter J do not apply to this cargo.

27. By deleting the entry in table 1 for "(iso-, n-) Propylamine" and the corresponding column entries;

28. By adding the following new cargoes and their corresponding column entries in proper alphabetical order to table 1:

Table 1.—*Table of Minimum Requirements*

Cargo name	Cargo containment system [1]	Vent height [2]	Vent [3]	Gauge [4]	Fire protection system [5]	Special requirements	Electrical hazard group and class [6]
Alkyl benzene sulfonic acid	III	NR	Open	Open	B	None	NA
Butyl methacrylate, decyl methacrylate, cetyl eicosyl methacrylate mixture.	III	4 m	PV	Restr	A, C, D	.912(a)(1), .1002 (a), (b), .1004	NA
Cashew nut shell oil (untreated).	III	4 m	PV	Restr	B	.526, .933	NA
2- or 3-Chloropropionic acid	III	NR	Open	Open	A	.238(a), .554	NA
Diisobutylamine	II	4 m	PV	Restr	B, D	.236 (a), (b), (c), (g), .409, .525 (a), (c), (e), .526, .1020.	I-C
Diphenyl methane diisocyanate.	II	B/3	PV	Closed	C, D	.236 (a), (b), .316, .409, .500, .501, .525, .526, .602, .1000, .1020.	NA
Dodecyl diphenyl oxide disulfonate solution.	III	NR	Open	Open	NSR	None	NA
2-Ethyl hexylamine	II	B/3	PV	Restr	A	.236 (b), (c), .525, .1020	I-C
Hexamethyleneimine	II	4 m	PV	Restr	A, C	.236 (a), (b), (c), (g), .526	I-C
Isophorone diamine	III	4 m	PV	Restr	A	.336 (b), (c), .526	NA
Isophorone diisocyanate	III	B/3	PV	Closed	C, D	.236 (a), (b), .316, .409, .525, .526, .602, .1000, .1020.	NA
Methacrylic acid	III	4 m	PV	Restr	A	.238(a), .526, .912(a)(1), .1002(a), .1004.	NA
Methyl formate	II	B/3	PV	Restr	A	.408, .525, .526, .527, .1020	I-D
ortho-Nitrophenol	II	B/3	PV	Closed	A, C, D	.409, .440, .525, .526, .1020	NA
1,3-Pentadiene	III	4 m	PV	Restr	B	.526, .912(a)(1), .1002 (a), (b), (c), .1004.	I-D
Perchloroethylene	III	4 m	PV	Restr	NSR	.526	NA
Polyethylene polyamines	III	NR	Open	Open	A	.236 (b), (c)	NA
Polymethylene polyphenyl isocyanate.	II	B/3	PV	Closed	C, D	.236 (a), (b), .316, .409, .500, .501. .525, .526, .602, .1000, .1020.	NA
Propionaldehyde	III	4 m	PV	Restr	A	.316, .526, .527	I-C
(iso-) Propylamine	II	B/3	PV	Closed	C	.236 (b), (c), .408, .440, .525, .526, .527, .1020.	I-D
(n-) Propylamine	II	B/3	PV	Closed	C	.236 (b), (c), .408, .500, .525, .526, .527, .1020.	I-D
(iso-) Propyl ether	III	4 m	PV	Restr	A	.409, .500, .515, .912(a)(1)	I-D
1,1,2-Trichloroethane	III	B/3	PV	Restr	NSR	.526	NA
Trichloroethylene	III	B/3	PV	Restr	NSR	.316, .336, .525, .1020	NA
Vinyl Neodecanate	III	NR	Open	Open	B	.912(a)(1), .1002(a)(b), .1004	NA
Xylenols	II	NR	Open	Open	B	None	NA

29. By adding a new § 153.14 to read as follows:

§ 153.14 Requirements for flammable and combustible cargoes.

Except as prescribed by this part, tank vessels carrying flammable or combustible cargoes in Table 1 must meet the requirements in Parts 30 to 34 of this chapter.

30. By revising § 153.208 (c) and (d) to read as follows:

§ 153.208 Ballast tank arrangements.

* * * * *

(c) Except as prescribed in paragraph (d) of this section, pumps, piping, vent lines, overflow tubes and sounding tubes serving dedicated ballast tanks

must not be located within a cargo containment system.

(d) Each vent line, overflow tube and sounding tube that serves a dedicated ballast tank and that is located within a cargo containment system must:

(1) Run in a trunk or piping tunnel having a wall thickness equal to the required tank plating thickness in the same location, or

(2) Be welded pipe that contains at least one expansion bend and is welded continuously on both sides of the innerbottom plating. The pipe must have a wall thickness equal to or greater than the innerbottom plating in the same location but not less than schedule 80.

31. By amending § 153.214(b)(1) and revising § 153.214(c) to read as follows:

§ 153.214 Personnel emergency and safety equipment.

* * * * *

(b) * * *

(1) A 30 minute self-contained breathing apparatus of the pressure demand type, approved by the Mining Safety and Health Administration ("formerly the Mining Enforcement and Safety Administration") and the National Institute for Occupational Safety and Health, or the tankship's flag administration with five refill tanks or cartridges of 30 minutes capacity each.

* * * * *

(c) First aid equipment.

32. By amending § 153.215(c) to read as follows:

§ 153.215 Safety equipment lockers.

* * * * *

(c) The second safety equipment locker must be adjacent to the second emergency shutdown station required by § 153.296. This locker must contain the remaining equipment required by § 153.214 (a) and (b).

* * * * *

33. By amending § 153.216 (b), (c) and (d) to read as follows:

§ 153.216 Shower and eye wash fountains.

* * * * *

(b) Maintain the water at a temperature between 10° C and 35° C (approx. 50° F and 95° F);

(c) Are located on the weatherdeck; and

(d) Are marked "Emergency Shower" as described in § 153.955 (c), (d), and (e), so that the legend is visible from work areas in the part of the deck where the cargo containment systems are located.

34. By amending § 153.217 to read as follows:

§ 153.217 Access to enclosed spaces and dedicated ballast tanks.

An access opening to an enclosed space or a dedicated ballast tank must meet the requirements for a cargo tank access in § 153.254 (b), (c), and (d) if—

(a) The enclosed space or dedicated ballast tank is located within the cargo area of the vessel; or

(b) A part of a cargo containment system lies within the enclosed space or dedicated ballast tank.

35. By adding a new § 153.219 to read as follows:

§ 153.219 Access to double bottom tanks serving as dedicated ballast tanks.

(a) Except as prescribed in paragraph (b) of this section, access openings to double bottom tanks serving as dedicated ballast tanks must not be located within a cargo containment system.

(b) Each access opening to a double bottom tank that is a dedicated ballast tank and that is located within a cargo containment system must be:

(1) Enclosed in an access trunk extending to the weatherdeck;

(2) Separated from the cargo containment system by two manhole coverings; or

(3) Approved by the Commandant (G–MMT).

36. By revising § 153.239 to read as follows:

§ 153.239 Use of cast iron.

Cast iron used in a cargo containment system must meet the standards of Part 56 of this chapter.

37. By amending § 153.251 to read as follows:

§ 153.251 Independent cargo tanks.

An independent cargo tank must meet §§ 38.05–10(a)(1), (b), (d) and (e)(1), 38.05–2(d) and 38.05–4(g) of this chapter. (See also § 153.256(b)).

§ 153.253 [Deleted].

38. By deleting § 153.253.

39. By revising § 153.281 to read as follows:

§ 153.281 Piping to independent tanks.

Piping for an independent cargo tank must penetrate the tank only through that part of the tank or dome extending above the weatherdeck.

40. By adding § 153.283(f) to read as follows:

§ 153.283 Valving for cargo piping.

* * * * *

(f) A valve required by this section must be a positive shutoff valve if the cargo exerts a gravity head pressure on the valve.

41. By amending § 153.284 (a), (b), (c) and (d) to read as follows:

§ 153.284 Characteristics of required quick closing valves.

* * * * *

(a) Be a positive shutoff valve;

(b) Be of the fail-closed type that closes on loss of power;

(c) Be capable of local manual closing; and

(d) Close from the time of actuation in 30 seconds or less.

42. By adding a new § 153.292 to read as follows:

§ 153.292 Separation of piping systems.

Cargo piping systems must be arranged so that any separation of piping systems can be done in a cargo handling space or on the weatherdeck.

43. By revising § 153.294(b) to read as follows:

§ 153.294 Marking of piping systems.

* * * * *

(b) Every hose connection of a cargo piping system must be marked with—

(1) The cargo piping system's working pressure required by § 38.10–10(a) of this chapter ; and

(2) Any maximum cargo transfer rate chosen under § 153.365(b).

44. By amending § 153.296(c) to read as follows:

§ 153.296 Emergency shutdown stations.

* * * * *

(c) A second emergency shutdown station must be located so that one of the two stations is accessible from any part of the weatherdeck if a break in a cargo piping system or hose causes spraying or leaking.

* * * * *

45. By amending § 153.314(b) to read as follows:

§ 153.314 Ventilation of spaces not usually occupied.

* * * * *

(b) Each enclosed space within the cargo area that does not have a permanent ventilation system meeting § 153.312 must have—

* * * * *

46. By amending § 153.336 to read as follows:

§ 153.336 Special cargo pump or pumproom requirements.

(a) When table 1 refers to this section—

(1) The cargo pump must be an intank cargo pump;

(2) The cargo pumproom must be on or above the weatherdeck; or

(3) The cargo pumproom must have the specific approval of the Commandant (G–MHM).

(b) For a cargo pumproom described in paragraph (a)(2) or (a)(3) of this section, the tankship must—

(1) Have a low pressure air supply system running to the pumproom; or

(2) Meet any requirements specified by the Commandant (G–MHM).

(c) A low pressure air supply system described in paragraph (b)(1) of this section must—

(1) Run from fixed air bottles to the pumproom;

(2) Have an air compressor to recharge the fixed air bottles;

(3) Have hose connections in the pumproom suitable for use with the breathing apparatus required in § 153.214(b)(1); and

(4) Have the air capacity to enable two men to work in the pumproom for at least one hour each without using the cartridges for the breathing apparatus required in § 153.214(b)(1).

47. By adding a new § 153.340 to read as follows:

§ 153.340 Venting system design.

Except as prescribed by this part, each cargo tank venting system that is fitted with a PV or SR valve must meet the standards of Part 56 of this chapter.

48. By revising § 153.350 to read as follows:

§ 153.350 Location of B/3 vent discharges.

Except as prescribed in § 153.353, a B/3 venting system must discharge—

(a) At the highest of the following points:

(1) 6m (approx. 19.7 ft) above the weatherdeck.

(2) B/3 above the weatherdeck.

(3) 6m (approx. 19.7 ft) above a walkway if the walkway is within 6m (approx. 19.7 ft) of a line drawn through the vent discharge and perpendicular to the deck.

(b) At least 15m (approx. 49.2 ft) from air intakes for, or openings into, accommodation and service spaces.

49. By revising § 153.351 to read as follows:

§ 153.351 Location of 4m vent discharges.

Except as prescribed in § 153.353, a 4m venting system must discharge—

(a) At least 4m (approx. 13.1 ft) above the higher of—

(1) The weatherdeck; or

(2) Any walkway that is within 4m (approx. 13.1 ft) of a line through the vent discharge and perpendicular to the deck.

(b) At least 10m (approx. 32.8 ft) from air intakes for, or openings into, accommodation or service spaces.

50. By revising § 153.353 to read as follows:

§ 153.353 High velocity vents.

The discharge point of a B/3 or 4m venting system must be located at least 3m (approx. 10 ft) above the weatherdeck or walkway if—

(a) The discharge is a vertical, unimpeded jet; and

(b) The jet has a minimum exit velocity of 30 m/sec (approx. 98.4 ft/sec).

51. By amending § 153.361 to read as follows:

§ 153.361 Arrangements for removal of valves from venting having multiple relief valves.

A venting system having multiple relief valves must have no arrangement that allows the removal of a valve (for repair, as an example) unless the venting system—

(a) Has valves that are interlocked, so that a person cannot remove so many valves that the venting system no longer has the minimum relieving capacity required by §§ 153.358; and

(b) Does not allow cargo vapor to escape through the opening left after a valve has been removed.

52. By adding a new § 153.365 to read as follows:

§ 153.365 Liquid overpressurization protection.

A containment system requiring closed or restricted gauging must—

(a) Have an overflow control system that meets § 153.408;

(b) Have an emergency overflow device;

(c) Be able to withstand the maximum pressure that develops during an overfill of the densest cargo endorsed for the containment system at a specified cargo transfer rate (See §§ 153.294(b) and 153.977(b); or

(d) Meet requirements specified by the Commandant (G–MHM).

§ 153.366 [Deleted].

53. By deleting § 153.366;

54. By amending § 153.407 (b), (c) and (d) to read as follows:

§ 153.407 Special requirements for sounding tube gauges.

* * * * *

(b) A sounding tube must not be installed on a tank whose relief valve setting exceeds 28 kPa gauge (approx. 4 psig) unless the sounding tube is specifically permitted by the Commandant (G–MHM).

(c) Except as prescribed in paragraph (d) of this section, a sounding tube must not be perforated.

(d) A perforated sounding tube must meet the following requirements:

(1) The sounding tube must have only one perforation.

(2) The diameter of the perforation must be less than 1.5 cm (approx. .5 in.).

55. By revising § 153.408 to read as follows:

§ 153.408 Tank overflow controls.

(a) When table 1 refers to this section, a cargo containment system must have—

(1) A cargo high level alarm that meets § 153.409 and whose operation can be checked before each loading;

(2) A continuous tank cargo level indicator; and

(3) Not later than 1 October 1982 a tank overflow control system that—

(i) Operates automatically;

(ii) Is independent of the high level alarm system;

(iii) Prevents a cargo tank from becoming 100 percent liquid full; and

(iv) Activates on the loss of power.

(b) If the tank overflow control system has either an automatic positive shutoff valve or an automatic stop valve to prevent overfilling of a cargo tank, the automatic valve must close without creating surge pressures that exceed the pressure prescribed in § 153.294(b).

(c) Each high level alarm must be marked as described in § 153.955(c), (d) and (e) with the legend "TANK OVERFLOW ALARM" so that the legend is visible from work areas in the part of the deck where the cargo containment systems are located.

56. By amending § 153.430(b) to read as follows:

§ 153.430 Heat transfer systems; general.

Cargo cooling and heating systems must—

* * * * *

(b) Have valving that enables the system to be separated from all other cooling and heat transfer systems; and

* * * * *

57. By amending § 153.432(a) and § 153.432(b) introductory text to read as follows:

§ 153.432 Cooling systems.

(a) Each cargo cooling system must have an equivalent standby unit that is installed and that can be placed in operation immediately after failure of the primary cooling system.

(b) Each tankship that has a cargo tank with a cooling system must have a manual that contains—

* * * * *

58. By revising § 153.434 to read as follows:

§ 153.434 Heat transfer coils within a tank.

When a cargo tank contains any quantity of cargo, a cargo cooling or heating system having coils within the tank must keep the heat transfer fluid at

a pressure greater than the pressure on the heating or cooling system caused by cargo.

59. By revising § 153.436 to read as follows:

§ 153.436 Heat transfer fluid.

When requested by the Coast Guard, the owner shall show that a heat transfer fluid used in a cargo tank heat transfer system does not chemically react with any cargo carried in those cargo tanks serviced by the heat transfer system.

60. By revising § 153.440 to read as follows:

§ 153.440 Cargo temperature sensors required.

(a) When table 1 refers to this section, the containment system must meet the following requirements:

(1) A heated or refrigerated cargo tank must have a remote reading thermometer sensing the temperature of the cargo at the bottom of the tank; and

(2) A refrigerated tank must have a second thermometer at the top of the tank.

(b) A readout for each remote thermometer required by this section must be at the point where cargo transfer is controlled.

(c) If the cargo requires either restricted or open gauging, portable thermometers which are lowered into the tank may be substituted for the termperature sensors required by paragraph (a) of this section. Portable thermometers used for cargoes requiring restricted gauging must be lowered into the tank through a gauging tube that meets § 153.407.

§ 153.464 [Deleted].

61. By deleting § 153.464;

62. By amending § 153.467 to read as follows:

§ 153.467 Ventilation systems for flammable cargoes.

(a) A ventilation system on a tankship that is endorsed to carry a flammable cargo must meet the requirements of this section if—

(1) The electrical motor, ventilation fan, control equipment or other electrical equipment for the ventilation system are located in a hazardous location as defined by § 111.105–1 of this chapter; or

(2) The ventilation system has an inlet in any hazardous location as defined in § 111.105–1 of this chapter.

(b) A ventilation system must meet the following:

(1) Each electric motor that drives a ventilation fan must be outside all ducts for any space that may contain flammable vapor.

(2) Each ventilation impeller and its housing must meet one of the following:

(i) The impeller, housing, or both must be made of non-metallic material that does not generate static electricity.

(ii) The impeller and housing must be made of non-ferrous material.

(iii) The impeller and housing must be made of austenitic stainless steel.

(iv) The tip clearance between the impeller and housing must be at least 1.3 cm (approx. 0.51 in.).

(3) No ventilation fan may have a combination of fixed and rotating components where one is made of an aluminum or magnesium alloy and the other made of a ferrous material.

63. By amending § 153.520(b) to read as follows:

§ 153.520 Special requirements for carbon disulfide.

* * * * *

(b) The location and use of electrical equipment must meet § 111.105–31 of this chapter.

* * * * *

64. By amending § 153.525(a), (d) and (f) to read as follows:

§ 153.525 Special requirements for unusually toxic cargoes.

(a) Cargo piping and venting systems must be designed so that they can be separated from any containment system endorsed for a cargo covered by this section.

* * * * *

(d) A heat transfer system for the cargo must—

(1) Be independent of other ship service systems, except for other cargo heat transfer systems, and not enter the engine room;

(2) Be totally external to the cargo containment system; or

(3) Be approved by the Commandant (G–MHM) for use with toxic cargoes.

* * * * *

(f) A cargo containment system must have a vapor return connection.

65. By revising § 153.526 to read as follows:

§ 153.526 Toxic vapor detectors.

(a) When table I refers to this section, a tankship must have two toxic vapor detectors, at least one of which must be portable, each able to measure the time weighted average (TWA) vapor concentration of the cargo. These vapor detectors may be combined with those required by § 153.465.

(b) When the toxic vapor detectors required by paragraph (a) of this section are not available and the cargo referenced to this section is transferred through a cargo pumproom, the tankship must meet § 153.336(b).

66. By amending § 153.527 to read as follows:

§ 153.527 Toxic vapor protection.

When table 1 refers to this section, a tankship must have on board the following for each crew member:

(a) An emergency excape breathing apparatus approved by the Mining Safety and Health Administration (formerly the Mining Enforcement and Safety Administration) and the National Institute for Occupational Safety and Health, or the tankship's flag administration.

(b) Where the emergency escape breathing apparatus does not protect the eyes from vapors, a set of goggles that either—

(1) Meet the specifications of ANSI Practice for Occupational and Educational Eye and Face Protection, Z–87.1 (1979); or

(2) Are approved by the tankship's flag administration.

67. By amending § 153.530 (e), (f), (g)(3), (h), (l) and (n) to read as follows:

§ 153.530 Special requirements for alkylene oxides.

* * * * *

(e) The tank's relief valve setting must not be less than 21 kPa gauge (approx. 3 psig).

(f) A containment system must have a cooling system. The cooling system must—

(1) Not compress the cargo;

(2) Regulate the cargo temperature automatically and allow manual regulation; and

(3) Maintain the cargo below the temperature at which the vapor pressure of the alkylene oxide equals the set pressure of the pressure relief valve.

(g) * * *

(3) Be assembled from value, fittings, and accessories having a pressure rating of not less than 1030 kPa gauge (approx. 150 psig) (American National Standards Institute); and

* * * * *

(h) The cargo containment system and those spaces listed in paragraphs (k) and (l) of this section must have an arrangement for monitoring the oxygen content of the space as prescribed by § 153.1010 (c) and (d).

* * * * *

(l) Cofferdams, cargo tanks, double bottom spaces, void spaces and other enclosed spaces adjacent to an integral cargo tank must have an inert gas system meeting the reguirement that apply to the inert gas system of a containment system in § 153.500.

* * * * *

(n) The cargo discharge piping system must have a remotely actuated quick

closing shutoff valve at the cargo transfer hose connection.

* * * * *

68. By adding a new paragraph § 153.530(q) to read as follows:

§ 153.530 Special requirements for alkylene oxides.

* * * * *

(q) On a tankship for which a building contract is let after 1 January 1982, an alkylene oxide cargo tank must be an independent tank.

69. By amending § 153.545(d) to read as follows:

§ 153.545 Special requirements for liquid sulfur.

* * * * *

(d) To be endorsed to carry liquid sulfur, a tankship must meet the requirements of § 111.105–31 of this chapter.

70. By amending § 153.555(b) to read as follows:

§ 153.555 Special requirements for inorganic acids.

* * * * *

(b) To be endorsed to carry a cargo referenced to this section, a tankship must meet § 111.105–31 of this chapter.

71. By adding a new § 153.602 to read as follows:

§ 153.602 Special requirements for cargoes reactive with water.

When table 1 refers to this section, the air inlets to the pressure vacuum relief valve for the cargo tank must be located at least 2m (approx. 6.6 ft) above the weatherdeck.

72. By revising § 153.808 to read as follows:

§ 153.808 Examination required for a Letter of Compliance.

To be issued a Letter of Compliance, a vessel must call at a U.S. port and be examined by the Coast Guard as prescribed under § 153.809.

73. By amending § 153.809 by adding paragraph (e) to read as follows:

§ 153.809 Procedures for having the Coast Guard examine a vessel for a Letter of Compliance

* * * * *

(e) Contact the Coast Guard Officer in Charge, Marine Inspection, at the port where the vessel is to be inspected at least 24 hours before the vessel arrives and arrange the exact time and other details of the examination.

§ 153.900 [Amended].

74. By changing the footnote numbers in § 153.900(a) and (b) and that of the corresponding footnote to read "5";

75. By revising § 153.905 to read as follows:

§ 153.905 Regulations required to be on board.

No person may operate a tankship unless a copy of this part and Part 35 of this chapter, containing all amendments up to the date of the endorsement of the tankship's Certificate of Inspection or Letter of Compliance are on board.

76. By amending § 153.932(b)(2) to read as follows:

§ 153.932 Goggles and protective clothing.

* * * * *

(b) * * *

(2) In a cargo pumproom, an enclosed space adjacent to a cargo tank, or a space containing part of a cargo containment system.

77. By revising § 153.934(a) and § 153.934(b) introductory text to read as follows:

§ 153.934 Entry into spaces containing cargo vapor.

(a) No person may enter a cargo tank, cargo handling space, or enclosed space in the cargo area without the permission of the master.

(b) Before permitting anyone to enter a cargo tank, cargo handling space or other enclosed space in the cargo area, the master shall ensure that—

* * * * *

78. By amending § 153.935(c) to read as follows:

§ 153.935 Opening of tanks and cargo sampling.

* * * * *

(c) The master shall ensure that cargoes requiring closed gauging are sampled only through the controlled sampling arrangement required by § 153.404(d).

79. By adding a new § 153.935a to read as follows:

§ 153.935a Storage of cargo samples.

(a) The master shall ensure that any cargo samples are stored in—

(1) A designated and ventilated space in the cargo area of the vessel; or

(2) An area approved by the Commandant (G–MHM) or the tankship's flag administration for the stowage of cargo samples.

(b) The master shall ensure that cargo sample bottles are stored—

(1) In a way that prevents shifting of the sample bottles when the vessel is at sea;

(2) In bins or containers constructed of materials which are resistant to the cargo samples; and

(3) Apart from other sample bottles containing incompatible liquids. (See Part 150, Subpart A).

80. By amending § 153.940(b)(3) to read as follows:

§ 153.940 Standards for marking of cargo hose.

* * * * *

(b) * * *

(3) Date of the last test made as prescribed in paragraph (e) of this section; and

* * * * *

81. By amending § 153.957(a) to read as follows:

§ 153.957 Person in charge of cargo transfer.

(a) The master of a U.S. flag tankship shall ensure that cargo transfer operations are supervised by a person who meets the qualifications of a person in charge under 33 CFR 155.710.

* * * * *

§ 153.963 [Amended].

82. By changing the footnote number in § 153.963(a) and that of the corresponding footnote to read "6".

83. By amending § 153.963(a) to read as follows:

§ 153.963 Incompatible cargo.

(a) * * *

(1) Cofferdams;

(2) Empty tanks;

(3) Void spaces;

(4) Cargo handling spaces;

(5) Tanks containing mutually compatible cargo; and

(6) Piping tunnels.

* * * * *

84. By amending § 153.968(b)(2) to read as follows:

§ 153.968 Cargo transfer conference.

* * * * *

(b) * * *

(2) The maximum transfer rates marked on the cargo hose connections or the maximum safe transfer rates.

* * * * *

85. By adding a new § 153.974 to read as follows:

§ 153.974 Ventilation of cargo handling spaces and pumprooms during cargo transfer.

The master shall ensure that when cargo is transferred, the ventilation systems for a cargo handling space or pumproom is operating as prescribed by § 153.312 and 153.316 if the cargo handling space or pumproom will—

(a) Be entered during the cargo transfer; or

(b) Handle the cargo being transferred.

86. By revising § 153.975(f) to read as follows:

§ 153.975 Preparation for cargo transfer.

* * * * *

(f) The cargo high level alarms and overflow control systems are functioning correctly when the cargo is loaded.

* * * * *

87. By revising § 153.977 to read as follows:

§ 153.977 Supervision of cargo transfer.

The person in charge of cargo transfer shall—

(a) Supervise the operation of cargo system valves;

(b) Monitor the cargo loading rate to ensure it does not exceed that stated at the cargo hose connections; and

(c) Monitor the cargo level in the tanks to ensure they do not overflow.

88. By adding a new § 153.980 to read as follows:

§ 153.980 Isolation of automatic closing valves.

The person in charge of cargo transfer may isolate automatic closing valves described in § 153.408(b) from a cargo containment system if the following conditions are met:

(a) The containment system carries products for which § 153.408 does not apply.

(b) The valves are isolated by—

(1) Removing the valves; or

(2) Installing removable pipe and blind flanges to by-pass the valves.

89. By adding a new § 153.1002 to read as follows:

§ 153.1002 Special operating requirements for heat sensitive cargoes.

When table 1 refers to this section, the master shall ensure that—

(a) The cargo temperature does not exceed the temperature that would induce polymerization, decomposition, thermal instability, evolution of gas or reaction of the cargo;

(b) Any heating coils in the cargo tank are blanked off; and

(c) The cargo is not carried in uninsulated deck tanks, as specified in table I.

90. By adding a new § 153.1004 to read as follows:

§ 153.1004 Inhibited and stabilized cargoes.

(a) Before loading a cargo containment system with a cargo referenced to this section in table 1, the person in charge of cargo transfer shall ensure that the cargo containment system is free of contaminants that could—

(1) Catalyze the polymerization or decomposition of the cargo; or

(2) Degrade the effectiveness of the inhibitor or stabilizer.

(b) The master shall ensure the cargo is maintained at a temperature which will prevent crystallization or solidification of the cargo.

91. By revising § 153.1010(a) and (d) to read as follows:

§ 153.1010 Alkylene oxides.

(a) Before each loading of a cargo containment system with a cargo referenced to this section in table 1, the person in charge of cargo transfer shall—

(1) Obtain verification from a Coast Guard Marine Inspector that separation of the alkylene oxide piping system complies with alkylene oxide handling plans approved by the Coast Guard or the tankship's flag administration;

(2) Ensure that each spectacle flange and blank flange connection that is required to separate alkylene oxide piping systems from other systems has a wire and seal attached by a Coast Guard Marine Inspector or a representative of the tankship's flag administration; and

(3) Purge the containment system until the oxygen content of the cargo tank is less than 2% by volume.

* * * * *

(d) The master shall ensure that the oxygen content of the vapor space above the alkylene oxide and those spaces specified in § 153.530(k) and (l) is maintained below 2% by volume.

92. By revising § 153.1011 to read as follows:

§ 153.1011 Changing containment systems and hoses to and from alkylene oxide service.

(a) The person in charge of cargo transfer shall ensure that—

(1) No alkylene oxide is loaded into a containment system that last carried a cargo other than an alkylene oxide unless the containment system has been cleaned to remove heavy rust accumulations and all traces of previous cargoes;

(2) No alkylene oxide is loaded into a containment system that within the previous three loadings has carried a cargo listed in paragraph (b) unless the containment system has been cleaned to the satisfaction of a Coast Guard Marine Inspector or a person specifically authorized by the Commandant (G–MHM) to approve alkylene oxide tank cleaning;

(3) No cargo but an alkylene oxide is loaded into a containment system which last carried an alkylene oxide unless the containment system has been cleaned of alkylene oxide to the satisfaction of a Coast Guard Marine Inspector or person specifically authorized by the Commandant (G–MHM) to approve alkylene oxide tank cleaning; and

(4) No hose marked "For Alkylene Oxide Transfer Only" is used for the transfer of a cargo other than an alkylene oxide.

(b) The following cargoes are particularly reactive with alkylene oxides:

(1) Non-oxidizing mineral acids (e.g. hydrochloric, phosphoric);

(2) Sulfuric acid;

(3) Nitric acid;

(4) Organic acids (e.g. acetic, formic);

(5) Halogenated organic acids (e.g. chloroacetic);

(6) Sulphonic acids (e.g. benzene sulphonic);

(7) Caustic alkalies (e.g. caustic soda, caustic potash; sodium hydrosulfide);

(8) Ammonia and ammonia solutions;

(9) Aliphatic amines;

(10) Alkanolamines;

(11) Oxidizing substances.

93. By amending § 153.1020(a) to read as follows:

§ 153.1020 Unusually toxic cargoes.

(a) No person may load or carry a cargo referenced to this section in table 1 unless the cargo's piping and venting systems are separated from piping and venting systems carrying cargoes not referred to this section.

* * * * *

94. By amending § 153.1025(b)(1) to read as follows:

§ 153.1025 Motor fuel antiknock compounds.

* * * * *

(b) * * *

(1) The person entering or working in the pumproom or void space does not receive an exposure to tetraethyl lead (as Pb) that exceeds an eight hour, time weighted average of 0.075 mg/m^3; or

* * * * *

95. By revising § 153.1052 to read as follows:

§ 153.1052 Carriage of other cargoes in acid tanks.

No person may load or carry other cargo in a cargo containment system endorsed to carry sulfuric acid, hydrochloric acid, or phosphoric acid without specific authorization from the Commandant (G–MHM).

96. By revising Appendix I to read as follows:

Appendix I—List of Cargoes Not Regulated under Part 151, Part 153 or Subchapter D

The following bulk liquid cargoes may be carried in tank vessels having neither a Certificate of Inspection under Subchapter D (Tank Vessels) nor a Letter of Compliance under Part 153;

Ammonium Nitrate Solution (34% or less)
Ammonium Nitrate, Urea, Water Solution, 2% or less NH_3
Ammonium Phosphate Solution
Ammonium Phosphate, Urea, Water Solution
Ammonium Sulfate Solution (20% or less)
Calcium Bromide Solution
Calcium Chloride in Water
2-Chloro-4-Ethylamino-6-Isopropylamino-5-Triazine, Water Solution
Choline Chloride Solutions

Glucose Solution
Hexamethylene Diamine Adipate
Kaolin Clay Slurry
Lignin Liquor (Calcium Lignosulfonate, Water Solution)
Magnesium Chloride Solution
Magnesium Hydroxide Suspensions in Water
Methyl Chloroform (1,1,1-Trichloroethane)
Molasses
Penatsodium Salt of Diethylene Triamine Pentaacetic Acid, Water Solution
Sewage Sludge, treated so as to pose no additional decomposition and fire hazard
Sludge (stable, non-corrosive, non-toxic, non-flammable)
Sodium Bromate Solutions
Sodium Carbonate Solutions
Sodium Lignosulfonates, Sodium Hydroxide (not exceeding 1% by weight), Water Solutions
Sodium Naphthenate Solutions (free alkali content, 3% or less)
Sorbitol in Water
Tetrasodium Salt of Ethylene Diamine Tetraacetic Acid, Water Solution
1,1,2-Trichloro-1,2,2-Trifluoroethane
Trisodium Salt of n-Hydroxyethyl Ethylenediamine Triacetic Acid, Water Solution
Urea in Water
Water
Mixtures solely of the cargoes in this list.

97. By amending Appendix III by revising the Kilo-Pascal entry to read as follows:

Appendix III—Metric Units Used in Pt. 153

Parameter	Metric (SI units)	Abbreviation	Equivalent to English or common metric
* * * * *			
Pressure * * *	Kilo-Pascal	kPa	1.02×10^{-2} kg/cm^2.

(46 U.S.C. 170, 46 U.S.C. 391a; 49 CFR 1.46 (n)(4) and (t))

Dated: July 2, 1980.

Henry H. Bell,

Rear Admiral, U.S. Coast Guard, Chief, Office of Merchant Marine Safety.

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